

Recent dynamics of Common Loon populations and their implications for the measurement of ongoing change. Jason S. Gear, Invited presentation, National Loon Symposium, Northland College, Ashland, WI, October 25-26, 2014.

Common loons (*Gavia immer*) have been studied by evolutionary ecologists and conservation organizations for several decades, leading to a rich supply of observational data on breeding biology, behavior and abundance. Analysis of such data can provide insight into population demography, dynamics, and life history evolution of birds and top predators, but is also critical for identifying and addressing potential impacts of human activity on loon fitness. In this presentation, I will discuss the results of a collaborative analysis involving eleven scientists from state, federal, academic, and non-government organizations (Journal of Wildlife Management 73:1108–1115). That analysis applied formal methods from theoretical population ecology to construct basic models of loon demography and population dynamics using collaborator data from New Hampshire and Wisconsin. Evidence of density-dependence (e.g., competition for space) and high sensitivity of loon populations to adult survival are among the highlights of that work. Most of my presentation will focus on the implications of these findings for recent and future efforts to understand and protect loon populations, including considerations for the design of monitoring programs.